



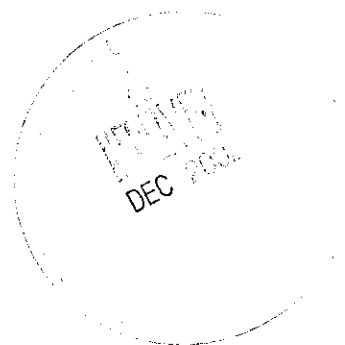
# EBERLINE

SERVICES

0059106

December 4, 2002

Ms. Joan Kessner  
Bechtel Hanford Inc.  
3350 George Washington Way  
Richland, WA 99352  
MSIN: H0-025



Reference: P.O. #630  
Eberline Services R2-11-093-7731, SDG H1978  
R2-11-094-7733

Dear Ms. Kessner:

Enclosed is the data report for forty-eight solid samples designated under SAF No. B00-029 received at Eberline Services on November 20, 2002. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion  
Program Manager

MCM

Enclosure: Data Package

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Analytical Services  
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## 1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H1978 was composed of forty-eight solid (soil) samples designated under SAF No. B00-029 with a Project Designation of: 100 F Area – Quick Turn.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-fax on November 27, 2002. The electronic data deliverables (EDD) were transmitted to BHI via e-mail on November 27, 2002.

## 2.0 ANALYSIS NOTES

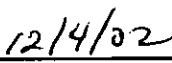
### 2.1 Gamma Screen Analyses

No problems were encountered during the course of the analyses.

### Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

  
\_\_\_\_\_  
Melissa C. Mannion  
Program Manager

  
\_\_\_\_\_  
Date

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG\_H1978

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Melissa Mannion  
Prepared by

Melissa Mannion  
Reviewed by

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG\_H1978

### ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

#### SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

#### PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

#### WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

#### METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

#### LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

#### REPORT GUIDES

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#### SUMMARY DATA SECTION

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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
Contract No. 630  
Case no SDG H1978

## ABOUT THE DATA SUMMARY SECTION

### DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

### MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

### DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

### METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

### REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

### REPORT GUIDES

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### SUMMARY DATA SECTION

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

## SAMPLE SUMMARY

SDG 7731

Contact Melissa C. Mannion

Client Hanford

Contract No. 630

Case no SDG H1978

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
J00968	116-F-1 Shallow Variance	SOLID		R211093-01	B00-029	B00-029-250	11/19/02 07:55
J00969	116-F-1 Shallow Variance	SOLID		R211093-02	B00-029	B00-029-250	11/19/02 07:57
J00970	116-F-1 Shallow Variance	SOLID		R211093-03	B00-029	B00-029-250	11/19/02 07:59
J00971	116-F-1 Shallow Variance	SOLID		R211093-04	B00-029	B00-029-250	11/19/02 08:01
J00972	116-F-1 Shallow Variance	SOLID		R211093-05	B00-029	B00-029-250	11/19/02 08:03
J00973	116-F-1 Shallow Variance	SOLID		R211093-06	B00-029	B00-029-250	11/19/02 08:05
J00974	116-F-1 Shallow Variance	SOLID		R211093-07	B00-029	B00-029-250	11/19/02 08:08
J00975	116-F-1 Shallow Variance	SOLID		R211093-08	B00-029	B00-029-250	11/19/02 08:10
J00976	116-F-1 Shallow Variance	SOLID		R211093-09	B00-029	B00-029-250	11/19/02 08:12
J00977	116-F-1 Shallow Variance	SOLID		R211093-10	B00-029	B00-029-250	11/19/02 08:14
J00978	116-F-1 Shallow Variance	SOLID		R211093-11	B00-029	B00-029-250	11/19/02 08:16
J00979	116-F-1 Shallow Variance	SOLID		R211093-12	B00-029	B00-029-250	11/19/02 08:18
J00980	116-F-1 Shallow Variance	SOLID		R211093-13	B00-029	B00-029-250	11/19/02 08:21
J00981	116-F-1 Shallow Variance	SOLID		R211093-14	B00-029	B00-029-250	11/19/02 08:23
J00982	116-F-1 Shallow Variance	SOLID		R211093-15	B00-029	B00-029-250	11/19/02 08:25
J00983	116-F-1 Shallow Variance	SOLID		R211093-16	B00-029	B00-029-250	11/19/02 08:27
J00984	116-F-1 Shallow Variance	SOLID		R211093-17	B00-029	B00-029-250	11/19/02 08:29
J00985	116-F-1 Shallow Variance	SOLID		R211093-18	B00-029	B00-029-250	11/19/02 08:31
J00986	116-F-1 Shallow Variance	SOLID		R211093-19	B00-029	B00-029-250	11/19/02 08:34
J00987	116-F-1 Shallow Variance	SOLID		R211093-20	B00-029	B00-029-250	11/19/02 08:36
J00988	116-F-1 Shallow Variance	SOLID		R211093-21	B00-029	B00-029-250	11/19/02 08:38
J00989	116-F-1 Shallow Variance	SOLID		R211093-22	B00-029	B00-029-250	11/19/02 08:40
J00990	116-F-1 Shallow Variance	SOLID		R211093-23	B00-029	B00-029-250	11/19/02 08:42
J00991	116-F-1 Shallow Variance	SOLID		R211093-24	B00-029	B00-029-250	11/19/02 08:44
Method Blank		SOLID		R211093-25	B00-029		

SAMPLE SUMMARY

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## EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731  
 Contact Melissa C. Mannion

## QC SUMMARY

Client Hanford  
 Contract No. 630  
 Case no SDG H1978

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7731	B00-029-250	J00968	SOLID	100.0	700.3 g		11/20/02	1	R211093-01	7731-001
		J00969	SOLID	100.0	660.9 g		11/20/02	1	R211093-02	7731-002
		J00970	SOLID	100.0	593.3 g		11/20/02	1	R211093-03	7731-003
		J00971	SOLID	100.0	499.8 g		11/20/02	1	R211093-04	7731-004
		J00972	SOLID	100.0	750.7 g		11/20/02	1	R211093-05	7731-005
		J00973	SOLID	100.0	565.7 g		11/20/02	1	R211093-06	7731-006
		J00974	SOLID	100.0	571.1 g		11/20/02	1	R211093-07	7731-007
		J00975	SOLID	100.0	804.6 g		11/20/02	1	R211093-08	7731-008
		J00976	SOLID	100.0	649.3 g		11/20/02	1	R211093-09	7731-009
		J00977	SOLID	100.0	887.4 g		11/20/02	1	R211093-10	7731-010
		J00978	SOLID	100.0	616.2 g		11/20/02	1	R211093-11	7731-011
		J00979	SOLID	100.0	647.1 g		11/20/02	1	R211093-12	7731-012
		J00980	SOLID	100.0	546.5 g		11/20/02	1	R211093-13	7731-013
		J00981	SOLID	100.0	790.5 g		11/20/02	1	R211093-14	7731-014
		J00982	SOLID	100.0	774.5 g		11/20/02	1	R211093-15	7731-015
		J00983	SOLID	100.0	727.6 g		11/20/02	1	R211093-16	7731-016
		J00984	SOLID	100.0	787.2 g		11/20/02	1	R211093-17	7731-017
		J00985	SOLID	100.0	691.6 g		11/20/02	1	R211093-18	7731-018
		J00986	SOLID	100.0	598.9 g		11/20/02	1	R211093-19	7731-019
		J00987	SOLID	100.0	923.8 g		11/20/02	1	R211093-20	7731-020
		J00988	SOLID	100.0	665.2 g		11/20/02	1	R211093-21	7731-021
		J00989	SOLID	100.0	694.3 g		11/20/02	1	R211093-22	7731-022
		J00990	SOLID	100.0	642.4 g		11/20/02	1	R211093-23	7731-023
		J00991	SOLID	100.0	703.3 g		11/20/02	1	R211093-24	7731-024
		Method Blank	SOLID						R211093-25	7731-025

QC SUMMARY

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731

Contact Melissa C. Mannion

## PREP BATCH SUMMARY

Client Hanford

Contract No. 630

Case no SDG H1978

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED					QUALIFIERS
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	
Gamma Spectroscopy										
GAM	SOLID	Gamma Scan	7032-099	15.0	24				1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY

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SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

## WORK SUMMARY

Client Hanford  
Contract No. 630  
Case no SDG H1978

CLIENT SAMPLE ID		LAB SAMPLE ID								
LOCATION	MATRIX	COLLECTED			SUF-					
CUSTODY	SAF No	RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
J00968		R211093-01	7731-001	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00969		R211093-02	7731-002	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00970		R211093-03	7731-003	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00971		R211093-04	7731-004	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00972		R211093-05	7731-005	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00973		R211093-06	7731-006	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00974		R211093-07	7731-007	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00975		R211093-08	7731-008	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00976		R211093-09	7731-009	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00977		R211093-10	7731-010	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								

WORK SUMMARY

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731

Contact Melissa C. Mannion

## WORK SUMMARY, cont.

Client Hanford

Contract No. 630

Case no SDG H1978

CLIENT SAMPLE ID		LAB SAMPLE ID								
LOCATION	MATRIX	COLLECTED			SUF-					
CUSTODY	SAF No	RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
J00978		R211093-11	7731-011	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00979		R211093-12	7731-012	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00980		R211093-13	7731-013	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00981		R211093-14	7731-014	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00982		R211093-15	7731-015	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00983		R211093-16	7731-016	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00984		R211093-17	7731-017	GAM		11/26/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00985		R211093-18	7731-018	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00986		R211093-19	7731-019	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00987		R211093-20	7731-020	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731

Contact Melissa C. Mannion

## WORK SUMMARY, cont.

Client Hanford

Contract No. 630

Case no SDG H1978

CLIENT SAMPLE ID	LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED	PLANCHET	TEST	SUF-	ANALYZED	REVIEWED	BY	METHOD	
CUSTODY	SAF No	RECEIVED			FIX					
J00988		R211093-21	7731-021	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00989		R211093-22	7731-022	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00990		R211093-23	7731-023	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
J00991		R211093-24	7731-024	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
116-F-1 Shallow Variance	SOLID	11/19/02								
B00-029-250	B00-029	11/20/02								
Method Blank		R211093-25	7731-025	GAM		11/25/02	11/27/02	MCM	Gamma Scan	
	SOLID									
	B00-029									

### COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	B00-029	Gamma Scan	GAMMA_GS	24			1			25
TOTALS				24			1			25

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-25

Method Blank

**METHOD BLANK**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-25</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7731-025</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.10	U	GAM
Europium 152	14683-23-9	U		0.083	0.10	U	GAM
Europium 154	15585-10-1	U		0.10	0.10	U	GAM
Europium 155	14391-16-3	U		0.092	0.10	U	GAM
Americium 241	14596-10-2	U		0.23		U	GAM

100 F Area - Quick Turn

QC-BLANK #43229

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-01

J00968

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-01</u>	Client sample id <u>J00968</u>	
Dept sample id <u>7731-001</u>	Location/Matrix <u>116-F-1 Shallow Variance</u>	<u>SOLID</u>
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 07:55</u>	<u>700.3 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.091</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.083</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.20</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.36</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.098</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-02

J00969

**DATA SHEET**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-02</u>	Client sample id <u>J00969</u>	
Dept sample id <u>7731-002</u>	Location/Matrix <u>116-F-1 Shallow Variance</u>	<u>SOLID</u>
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 07:57</u>	<u>660.9 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.062</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.062</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.081</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-03

J00970

**DATA SHEET**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-03</u>	Client sample id <u>J00970</u>	
Dept sample id <u>7731-003</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 07:59 593.3 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.10</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.085</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.23</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.35</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.23</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.32</u>		U	GAM

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**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211093-04**

**J00971**

**DATA SHEET**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-04</u>	Client sample id <u>J00971</u>	
Dept sample id <u>7731-004</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:01 499.8 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.067</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.070</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.21</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.21		U	GAM

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-05

J00972

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-05</u>	Client sample id <u>J00972</u>	
Dept sample id <u>7731-005</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:03 750.7 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.067</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.064</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.24</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.18</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.45</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-06

J00973

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R211093-06</u>	Client sample id <u>J00973</u>	
Dept sample id <u>7731-006</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:05 565.7 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.12</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.13</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.25</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.49</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.34</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.14		U	GAM

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**SAMPLE DELIVERY GROUP H1978**

R211093-07

J00974

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R211093-07</u>	Client sample id <u>J00974</u>	
Dept sample id <u>7731-007</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:08 571.1 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.081</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.082</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.19</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.23</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.16</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.10</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-08

J00975

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-08</u>	Client sample id <u>J00975</u>	
Dept sample id <u>7731-008</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:10 804.6 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.11</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.070</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.20</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.32</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.24</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.32</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211093-09**

**J00976**

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SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-09</u>	Client sample id <u>J00976</u>	
Dept sample id <u>7731-009</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:12 649.3 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.078</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.077	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.17</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.19</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.24		U	GAM

100 F Area - Quick Turn

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**SAMPLE DELIVERY GROUP H1978**

**R211093-10**

**J00977**

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-10</u>	Client sample id <u>J00977</u>	
Dept sample id <u>7731-010</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:14 887.4 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.077	0.050	U	GAM
Cesium 137	10045-97-3	U		0.057	0.10	U	GAM
Europium 152	14683-23-9	U		0.14	0.10	U	GAM
Europium 154	15585-10-1	U		0.23	0.10	U	GAM
Europium 155	14391-16-3	U		0.20	0.10	U	GAM
Americium 241	14596-10-2	U		0.51		U	GAM

100 F Area - Quick Turn

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-11

J00978

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-11</u>	Client sample id <u>J00978</u>	
Dept sample id <u>7731-011</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:16 616.2 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.12</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.11</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.21</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.34</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.11		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-12

J00979

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-12</u>	Client sample id <u>J00979</u>	
Dept sample id <u>7731-012</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:18 647.1 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250 B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.054</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.063</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.22</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.086</u>		U	GAM

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**EBERLINE SERVICES / RICHMOND**

SAMPLE DELIVERY GROUP H1978

R211093-13

J00980

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SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-13</u>	Client sample id <u>J00980</u>	
Dept sample id <u>7731-013</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:21 546.5 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250 B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.11</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.087</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.26</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.32</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.26</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.36</u>		U	GAM

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**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211093-14**

**J00981**

**DATA SHEET**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-14</u>	Client sample id <u>J00981</u>	
Dept sample id <u>7731-014</u>	Location/Matrix <u>116-F-1 Shallow Variance</u>	<u>SOLID</u>
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:23</u>	<u>790.5 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.052</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.052</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.20</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.18</u>		U	GAM

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## EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

R211093-15

J00982

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SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-15</u>	Client sample id <u>J00982</u>	
Dept sample id <u>7731-015</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:25 774.5 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.067</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.068</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.24</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.54</u>		U	GAM

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**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211093-16**

**J00983**

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-16</u>	Client sample id <u>J00983</u>	
Dept sample id <u>7731-016</u>	Location/Matrix <u>116-F-1 Shallow Variance</u>	<u>SOLID</u>
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:27</u>	<u>727.6 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.087</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.077</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.30</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.24</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.092</u>		U	GAM

100 F Area - Quick Turn

**DATA SHEETS**

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>11/27/02</u>

**EBERLINE SERVICES / RICHMOND**

SAMPLE DELIVERY GROUP H1978

R211093-17

J00984

**DATA SHEET**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-17</u>	Client sample id <u>J00984</u>	
Dept sample id <u>7731-017</u>	Location/Matrix <u>116-F-1 Shallow Variance</u> <u>SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:29</u> <u>787.2 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.099</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.071</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.19</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.27</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.20</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.26</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>11/27/02</u>

DATA SHEETS

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SUMMARY DATA SECTION

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-18

J00985

**DATA SHEET**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-18</u>	Client sample id <u>J00985</u>	
Dept sample id <u>7731-018</u>	Location/Matrix <u>116-F-1 Shallow Variance</u>	<u>SOLID</u>
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:31</u>	<u>691.6 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.083</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.171	0.083	0.10	0.10		GAM
Europium 152	14683-23-9	0.429	0.13	<u>0.17</u>	0.10		GAM
Europium 154	15585-10-1	U		<u>0.27</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.21</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.28		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-19

J00986

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-19</u>	Client sample id <u>J00986</u>	
Dept sample id <u>7731-019</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:34 598.9 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.053</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.054</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.22</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.19</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>11/27/02</u>

**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211093-20**

**J00987**

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-20</u>	Client sample id <u>J00987</u>	
Dept sample id <u>7731-020</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:36 923.8 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250 B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.051</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.048</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.36</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>11/27/02</u>



**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-21

J00988

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-21</u>	Client sample id <u>J00988</u>	
Dept sample id <u>7731-021</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:38 665.2 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.073</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.062</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.11</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.083</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-22

J00989

**DATA SHEET**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-22</u>	Client sample id <u>J00989</u>	
Dept sample id <u>7731-022</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:40 694.3 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250 B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.047	0.050	U	GAM
Cesium 137	10045-97-3	0.227	0.053	0.055	0.10		GAM
Europium 152	14683-23-9	0.458	0.075	0.094	0.10		GAM
Europium 154	15585-10-1	U		<u>0.16</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.092	0.10	U	GAM
Americium 241	14596-10-2	U		0.066		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
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Version <u>3.06</u>
Report date <u>11/27/02</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-23

J00990

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-23</u>	Client sample id <u>J00990</u>	
Dept sample id <u>7731-023</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:42 642.4 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.084</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.063</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.17</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.29</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.17</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.25</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211093-24

J00991

**D A T A   S H E E T**

SDG <u>7731</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211093-24</u>	Client sample id <u>J00991</u>	
Dept sample id <u>7731-024</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:44 703.3 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-250 B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.041	0.050	U	GAM
Cesium 137	10045-97-3	U		0.044	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.16</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.15		U	GAM

100 F Area - Quick Turn

**DATA SHEETS**

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**SUMMARY DATA SECTION**

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Report date <u>11/27/02</u>

## EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

Test GAM Matrix SOLID  
SDG 7731  
Contact Melissa C. Mannion

## METHOD SUMMARY

GAMMA SCAN  
GAMMA SPECTROSCOPY

Client Hanford  
Contract No. 630  
Contract SDG H1978

## RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Cobalt 60	Cesium 137
Preparation batch 7032-099					
J00968	R211093-01	7731-001	U	U	
J00969	R211093-02	7731-002	U	U	
J00970	R211093-03	7731-003	U	U	
J00971	R211093-04	7731-004	U	U	
J00972	R211093-05	7731-005	U	U	
J00973	R211093-06	7731-006	U	U	
J00974	R211093-07	7731-007	U	U	
J00975	R211093-08	7731-008	U	U	
J00976	R211093-09	7731-009	U	U	
J00977	R211093-10	7731-010	U	U	
J00978	R211093-11	7731-011	U	U	
J00979	R211093-12	7731-012	U	U	
J00980	R211093-13	7731-013	U	U	
J00981	R211093-14	7731-014	U	U	
J00982	R211093-15	7731-015	U	U	
J00983	R211093-16	7731-016	U	U	
J00984	R211093-17	7731-017	U	U	
J00985	R211093-18	7731-018	U	0.171	
J00986	R211093-19	7731-019	U	U	
J00987	R211093-20	7731-020	U	U	
J00988	R211093-21	7731-021	U	U	
J00989	R211093-22	7731-022	U	0.227	
J00990	R211093-23	7731-023	U	U	
J00991	R211093-24	7731-024	U	U	
BLK (QC ID=43229)	R211093-25	7731-025	U	U	

Nominal values and limits from method RDLs (pCi/g) 0.050 0.10  
100 F Area - Quick Turn

## METHOD SUMMARIES

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## SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

## METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Test GAM Matrix SOLID

SDG 7731

Contact Melissa C. Mannion

Client Hanford

Contract No. 630

Contract SDG H1978

## METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW SUF- TEST FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
Preparation batch 7032-099 2σ prep error 15.0 % Reference Lab Notebook 7024 pg. 099															
J00968	R211093-01		<u>0.091</u>	700					<u>41</u>			6	11/23/02	11/25	02,01,00
J00969	R211093-02		<u>0.062</u>	661					<u>41</u>			6	11/23/02	11/25	MB,07,00
J00970	R211093-03		<u>0.10</u>	593					<u>41</u>			6	11/23/02	11/25	02,03,00
J00971	R211093-04		<u>0.067</u>	500					<u>41</u>			6	11/23/02	11/25	02,04,00
J00972	R211093-05		<u>0.067</u>	751					<u>41</u>			6	11/23/02	11/25	MB,05,00
J00973	R211093-06		<u>0.12</u>	566					<u>31</u>			6	11/23/02	11/25	02,01,00
J00974	R211093-07		<u>0.081</u>	571					<u>31</u>			6	11/23/02	11/25	MB,07,00
J00975	R211093-08		<u>0.11</u>	805					<u>31</u>			6	11/23/02	11/25	02,03,00
J00976	R211093-09		<u>0.078</u>	649					<u>31</u>			6	11/23/02	11/25	02,04,00
J00977	R211093-10		<u>0.077</u>	887					<u>31</u>			6	11/23/02	11/25	MB,05,00
J00978	R211093-11		<u>0.12</u>	616					<u>40</u>			6	11/23/02	11/25	02,01,00
J00979	R211093-12		<u>0.054</u>	647					<u>41</u>			6	11/23/02	11/25	MB,07,00
J00980	R211093-13		<u>0.11</u>	547					<u>40</u>			6	11/23/02	11/25	02,03,00
J00981	R211093-14		<u>0.052</u>	791					<u>41</u>			6	11/23/02	11/25	02,04,00
J00982	R211093-15		<u>0.067</u>	775					<u>41</u>			6	11/23/02	11/25	MB,05,00
J00983	R211093-16		<u>0.087</u>	728					<u>55</u>			6	11/23/02	11/25	02,01,00
J00984	R211093-17		<u>0.099</u>	787					<u>43</u>			7	11/23/02	11/26	02,03,00
J00985	R211093-18		<u>0.083</u>	692					<u>55</u>			6	11/23/02	11/25	02,03,00
J00986	R211093-19		<u>0.053</u>	599					<u>55</u>			6	11/23/02	11/25	02,04,00
J00987	R211093-20		<u>0.051</u>	924					<u>55</u>			6	11/23/02	11/25	MB,05,00
J00988	R211093-21		<u>0.073</u>	665					<u>73</u>			6	11/23/02	11/25	02,01,00
J00989	R211093-22		<u>0.047</u>	694					<u>74</u>			6	11/23/02	11/25	MB,07,00
J00990	R211093-23		<u>0.084</u>	642					<u>73</u>			6	11/23/02	11/25	02,03,00
J00991	R211093-24		<u>0.041</u>	703					<u>73</u>			6	11/23/02	11/25	02,04,00
BLK (QC ID=43229)	R211093-25		<u>0.027</u>	500					<u>74</u>				11/23/02	11/25	MB,05,00

Nominal values and limits from method 0.050 500 100 180

PROCEDURES REFERENCE GAMMA\_GS  
CP-100 Ge(Li) Preparation for Commercial Samples, rev 5

AVERAGES ± 2 SD MDA 0.076 ± 0.050  
FOR 25 SAMPLES YIELD \_\_\_\_\_ ± \_\_\_\_\_

# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG\_H1978

## SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- \* LAB SAMPLE ID is the lab's primary identification for a sample.
- \* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- \* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- \* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- \* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

### REPORT GUIDES

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### SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 11/27/02

# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG\_H1978

### PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- \* The preparation batches are shown in the same order as the Method Summary Reports are printed.
- \* Only analyses of planchets relevant to the SDG are included.
- \* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- \* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

#### REPORT GUIDES

Page 2

#### SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 11/27/02



# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H1978

## WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- \* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- \* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- \* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- \* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- \* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- \* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

### REPORT GUIDES

Page 3

### SUMMARY DATA SECTION

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Lab id EBRLNE  
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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H1978

## DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- \* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- \* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- \* ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- \* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- \* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity).

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### SUMMARY DATA SECTION

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Lab id EBRLNE  
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EBERLINE SERVICES / RICHMOND  
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DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- \* An MDA is underlined if it is bigger than its RDL.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
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## DATA SHEET

- \* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- \* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- \* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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### SUMMARY DATA SECTION

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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

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### LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- \* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  1. The error of RESULT, including that introduced by rounding the result prior to printing.
 

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
  2. The error of ADDED.
  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits for the recovery.
- \* The recovery is underlined if it is outside either of these ranges.

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#### SUMMARY DATA SECTION

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# EBERLINE SERVICES / RICHMOND

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### DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- \* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- \* The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

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#### SUMMARY DATA SECTION

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- \* The RPD is underlined if it is greater than either limit.
- \* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- \* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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### MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- \* The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- \* The second limits are protocol defined upper and lower QC limits

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MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- \* The recovery is underlined (out of spec) if it is outside either of these ranges.

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## METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- \* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- \* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- \* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- \* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- \* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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### SUMMARY DATA SECTION

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## METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- \* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- \* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- \* Aliquots are underlined if less than the nominal value specified for the method.
- \* Preparation factors are underlined if greater than the nominal value specified for the method.
- \* Dilution factors are underlined if greater than the nominal value specified for the method.
- \* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- \* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- \* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

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### SUMMARY DATA SECTION

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## METHOD SUMMARY

- \* Count times are underlined if less than the nominal value specified for the method.
- \* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- \* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- \* Days Held are underlined if greater than the holding time specified in the protocol.
- \* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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### SUMMARY DATA SECTION

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SAMPLE DELIVERY GROUP H1978

SDG 7731  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
Contract No. 630  
Case no SDG H1978

## METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

### REPORT GUIDES

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### SUMMARY DATA SECTION

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Lab id EBRLNE  
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<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B00-029-250</b>		Page 1 of 2	
Collector MT Stankovich		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <b>2D</b> Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<b>H1978(7731)</b>		SAF No. B00-029		Air Quality <input type="checkbox"/> <b>7-Day</b>	
Ice Chest No. <b>SEE OSCP</b>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx			
Shipped To <b>TMA/RECRA</b>		Offsite Property No. <b>A030055</b>				Bill of Lading/Air Bill No. <b>SEE OSCP</b>			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  Radioactive <b>Tc To B13 DV9</b>  Special Handling and/or Storage <b>None</b>					Preservation		None		
					Type of Container		Marinelli		
					No. of Container(s)		1		
					Volume		500mL		
<b>SAMPLE ANALYSIS</b>					See item (1) in Special Instructions.				
Sample No.		Matrix *	Sample Date	Sample Time					
J00968		SOIL	11-19-02	0755	—				
J00969		SOIL	11-19-02	0757	—				
J00970		SOIL	11-19-02	0759	—				
J00971		SOIL	11-19-02	0801	✓				
J00972		SOIL	11-19-02	0803	✓				
<b>CHAIN OF POSSESSION</b>					<b>SPECIAL INSTRUCTIONS</b>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Matrix * S=Soil SB=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
R. F. Hays		11-19-02		Fed Ex		11-20-02 9:55			
Fed Ex		11/20/02 9:55		Fed Ex		11/20/02 9:55			
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time			
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time			

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B00-029-250</b>		<b>Page 2 of 3</b>	
Collector MT Stankovich   <i>Fahley</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <b>2D</b> Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<i>H1978 (7731)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7-day</i>	
Ice Chest No. <i>SEE OSPC</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx			
Shipped To (TMA) RECRA		Offsite Property No. <i>A030055</i>				Bill of Lading/Air Bill No. <i>SEE OSPC</i>			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> Radioactive <i>TIC TO B13DV9</i>  Special Handling and/or Storage <i>None</i>				Preservation		None			
				Type of Container		Marinelli			
				No. of Container(s)		1			
				Volume		500mL			
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.					
Sample No.		Matrix *		Sample Date		Sample Time			
J00973		SOIL		11-19-02		0805		✓	
J00974		SOIL		11-19-02		0808		✓	
J00975		SOIL		11-19-02		0810		✓	
J00976		SOIL		11-19-02		0812		✓	
J00977		SOIL		11-19-02		0814		✓	
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>  (1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>R. F. Lee</i>		<i>11-19-02</i>		<i>Fed Ex</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<i>Fed Ex</i>		<i>11/20/02 9:55</i>		<i>And. Sarna</i>		<i>11/20/02 9:55</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time	

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B00-029-250</b>		Page 1 of 1									
Collector MT Stankovich <i>I. Fahlberg</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <b>20</b> Data Turnaround									
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<i>H1978 (7781)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7-days</i>									
Ice Chest No. <i>SEE OSPC</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx											
Shipped To <i>TMA/RECRA</i>		Offsite Property No. <i>A030055</i>				Bill of Lading/Air Bill No. <i>SEE OSPC</i>											
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  Radioactive <i>TicTo B13DV9</i>  Special Handling and/or Storage  <i>None</i>				Preservation	None												
				Type of Container	Marinelli												
				No. of Container(s)	1												
				Volume	500mL												
<b>SAMPLE ANALYSIS</b>					See item (1) in Special Instructions.												
Sample No.	Matrix *	Sample Date	Sample Time														
<i>J00978</i>	SOIL	<i>11-19-02</i>	<i>0816</i>	<i>—</i>													
<i>J00979</i>	SOIL	<i>11-19-02</i>	<i>0818</i>	<i>—</i>													
<i>J00980</i>	SOIL	<i>11-19-02</i>	<i>0821</i>	<i>—</i>													
<i>J00981</i>	SOIL	<i>11-19-02</i>	<i>0823</i>	<i>✓</i>													
<i>J00982</i>	SOIL	<i>11-19-02</i>	<i>0825</i>	<i>✓</i>													
<b>CHAIN OF POSSESSION</b>					<b>SPECIAL INSTRUCTIONS</b>					<b>Matrix *</b>  S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Traces WI=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From <i>ERC</i>		Date/Time <i>11-19-02</i>		Received By/Stored In <i>Fed Ex</i>		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)											
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>11/20/02 9:55</i>		Received By/Stored In <i>Fed Ex</i>													
Relinquished By/Removed From		Date/Time		Received By/Stored In													
Relinquished By/Removed From		Date/Time		Received By/Stored In													
Relinquished By/Removed From		Date/Time		Received By/Stored In													
Relinquished By/Removed From		Date/Time		Received By/Stored In													
<b>LABORATORY SECTION</b>		Received By		Title					Date/Time								
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By					Date/Time								



<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B00-029-250</b>		<b>Page 4 of 2</b>																																																													
Collector MT Stankovich   <i>Fahberg</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <b>2D</b> Data Turnaround																																																													
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<i>H1978 (7731)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7-day</i>																																																													
Ice Chest No. <i>SEE OSRC</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx																																																															
Shipped To (TMA) RECRA		Offsite Property No. <i>A030055</i>				Bill of Lading/Air Bill No. <i>SEE OSRC</i>																																																															
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> <i>Radioactive Tie To B13DV1</i>  <b>Special Handling and/or Storage</b> <i>None</i>					Preservation		None																																																														
					Type of Container		Marinelli																																																														
					No. of Container(s)		1																																																														
					Volume		500mL																																																														
<b>SAMPLE ANALYSIS</b>					See Item (1) in Special Instructions.																																																																
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample No.</th> <th>Matrix *</th> <th>Sample Date</th> <th>Sample Time</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>J00983</td> <td>SOIL</td> <td>11-19-02</td> <td>0827</td> <td>—</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>J00984</td> <td>SOIL</td> <td>11-19-02</td> <td>0829</td> <td>—</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>J00985</td> <td>SOIL</td> <td>11-19-02</td> <td>0831</td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>J00986</td> <td>SOIL</td> <td>11-19-02</td> <td>0834</td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>J00987</td> <td>SOIL</td> <td>11-19-02</td> <td>0836</td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										Sample No.	Matrix *	Sample Date	Sample Time							J00983	SOIL	11-19-02	0827	—						J00984	SOIL	11-19-02	0829	—						J00985	SOIL	11-19-02	0831	✓						J00986	SOIL	11-19-02	0834	✓						J00987	SOIL	11-19-02	0836	✓					
Sample No.	Matrix *	Sample Date	Sample Time																																																																		
J00983	SOIL	11-19-02	0827	—																																																																	
J00984	SOIL	11-19-02	0829	—																																																																	
J00985	SOIL	11-19-02	0831	✓																																																																	
J00986	SOIL	11-19-02	0834	✓																																																																	
J00987	SOIL	11-19-02	0836	✓																																																																	
<b>CHAIN OF POSSESSION</b>					<b>SPECIAL INSTRUCTIONS</b>																																																																
Relinquished By/Removed From <i>ERC</i> Date/Time <i>11-19-02</i>		Received By/Stored In <i>Fed Ex</i> Date/Time			<b>(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)</b>																																																																
Relinquished By/Removed From <i>Fed Ex</i> Date/Time <i>11/20/02 9:55</i>		Received By/Stored In <i>Joe D. Jones</i> Date/Time <i>11/20/02 9:55</i>																																																																			
Relinquished By/Removed From		Received By/Stored In																																																																			
Relinquished By/Removed From		Received By/Stored In																																																																			
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					<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wp=Wipe L=Liquid V=Vegetation X=Other																																																																
<b>LABORATORY SECTION</b>		Received By			Title																																																																
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method			Disposed By																																																																
					Date/Time																																																																

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B00-029-250</b>		Page 1 of 1	
Collector MT Stankovich <i>Fahlberg</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <b>2D</b> Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<i>H1978 (7731)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7-day</i>	
Ice Chest No. <i>SEE OSPC</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx			
Shipped To <i>TMA/RECRA</i>		Offsite Property No. <i>A030055</i>				Bill of Lading/Air Bill No. <i>SEE OSPC</i>			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> <i>Radioactive Tie To B13D V9</i>  <b>Special Handling and/or Storage</b> <i>None</i>					Preservation		None		
					Type of Container		Marinelli		
					No. of Container(s)		1		
					Volume		500mL		
<b>SAMPLE ANALYSIS</b>					See item (1) in Special Instructions.				
Sample No.		Matrix *		Sample Date		Sample Time			
J00988		SOIL		11-19-02		0838		<input checked="" type="checkbox"/>	
J00989		SOIL		11-19-02		0840		<input checked="" type="checkbox"/>	
J00990		SOIL		11-19-02		0842		<input checked="" type="checkbox"/>	
J00991		SOIL		11-19-02		0844		<input checked="" type="checkbox"/>	
<b>CHAIN OF POSSESSION</b>					<b>SPECIAL INSTRUCTIONS</b>				
Relinquished By/Removed From <i>R. Fahlberg</i>		Date/Time <i>11-19-02</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time		<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Dross Solids DL=Dross Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>11/20/02 9:55</i>		Received By/Stored In <i>for Dams</i>		Date/Time <i>11/20/02 9:55</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time			
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time			

**EBERLINE SERVICES**

Richmond, CA Laboratory

**ANALYTICAL SERVICES GROUP****SAMPLE RECEIPT CHECKLIST****SAMPLE RECEIPT**

Client: Bechtel Sanford Date/Time received 11/20/02  
CoC No. B00-029-250  
Container I.D. No. ERC-96-044 Requested TAT (Days) 7 Days P.O. Received Yes [ ] No [ ]

**INSPECTION**

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [✓]
6. Number of samples in shipping container: 24
7. Number of containers per sample: 1 each (Or see CoC \_\_\_\_\_)
8. Paperwork agrees with samples? Yes [✓] No [ ]
9. Samples have: Tape [✓] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
10. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
11. Describe any anomalies: None
13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_
14. Received by Jim Davis Date: 11/20/02 Time: 9:55

Customer Sample  
No.

cpm

mr/hr

wipe

Customer Sample  
No.

cpm

mr/hr

wipe


Ion Chamber Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_

Alpha meter Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_

Survey Meter Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_



EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H1978

SDG 7733  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG\_H1978

S U M M A R Y   D A T A   S E C T I O N

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Work Summary	.	.	.	.	6
Method Blanks	.	.	.	.	9
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Melissa Mannion  
Prepared by  
  
Melissa Mannion  
Reviewed by

Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 11/27/02

# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7733  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG\_H1978

### ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

#### SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

#### PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

#### WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

#### METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

#### LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

#### REPORT GUIDES

Page 1

#### SUMMARY DATA SECTION

Page 1

Lab id EBRLNE  
Protocol Hanford  
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Form DVD-RG  
Version 3.06  
Report date 11/27/02

# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7733  
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford  
Contract No. 630  
Case no SDG H1978

## ABOUT THE DATA SUMMARY SECTION

### DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

### MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

### DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

### METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

### REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

### REPORT GUIDES

Page 2

### SUMMARY DATA SECTION

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7733

Contact Melissa C. Mannion

## SAMPLE SUMMARY

Client Hanford

Contract No. 630

Case no SDG H1978

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
J00992	116-F-1 Shallow Variance	SOLID		R211094-01	B00-029	B00-029-251	11/19/02 08:04
J00993	116-F-1 Shallow Variance	SOLID		R211094-02	B00-029	B00-029-251	11/19/02 08:06
J00994	116-F-1 Shallow Variance	SOLID		R211094-03	B00-029	B00-029-251	11/19/02 08:08
J00995	116-F-1 Shallow Variance	SOLID		R211094-04	B00-029	B00-029-251	11/19/02 08:10
J00996	116-F-1 Shallow Variance	SOLID		R211094-05	B00-029	B00-029-251	11/19/02 08:12
J00997	116-F-1 Shallow Variance	SOLID		R211094-06	B00-029	B00-029-251	11/19/02 08:14
J00998	116-F-1 Shallow Variance	SOLID		R211094-07	B00-029	B00-029-251	11/19/02 08:17
J00999	116-F-1 Shallow Variance	SOLID		R211094-08	B00-029	B00-029-251	11/19/02 08:19
J00980	116-F-1 Shallow Variance	SOLID		R211094-09	B00-029	B00-029-251	11/19/02 08:21
J00981	116-F-1 Shallow Variance	SOLID		R211094-10	B00-029	B00-029-251	11/19/02 08:23
J00982	116-F-1 Shallow Variance	SOLID		R211094-11	B00-029	B00-029-251	11/19/02 08:25
J00983	116-F-1 Shallow Variance	SOLID		R211094-12	B00-029	B00-029-251	11/19/02 08:27
J00984	116-F-1 Shallow Variance	SOLID		R211094-13	B00-029	B00-029-251	11/19/02 08:30
J00985	116-F-1 Shallow Variance	SOLID		R211094-14	B00-029	B00-029-251	11/19/02 08:32
J00986	116-F-1 Shallow Variance	SOLID		R211094-15	B00-029	B00-029-251	11/19/02 08:34
J00987	116-F-1 Shallow Variance	SOLID		R211094-16	B00-029	B00-029-251	11/19/02 08:36
J00988	116-F-1 Shallow Variance	SOLID		R211094-17	B00-029	B00-029-251	11/19/02 08:38
J00989	116-F-1 Shallow Variance	SOLID		R211094-18	B00-029	B00-029-251	11/19/02 08:40
J009C0	116-F-1 Shallow Variance	SOLID		R211094-19	B00-029	B00-029-251	11/19/02 08:43
J009C1	116-F-1 Shallow Variance	SOLID		R211094-20	B00-029	B00-029-251	11/19/02 08:45
J009C2	116-F-1 Shallow Variance	SOLID		R211094-21	B00-029	B00-029-251	11/19/02 08:47
J009C3	116-F-1 Shallow Variance	SOLID		R211094-22	B00-029	B00-029-251	11/19/02 08:49
J009C4	116-F-1 Shallow Variance	SOLID		R211094-23	B00-029	B00-029-251	11/19/02 08:51
J009C5	116-F-1 Shallow Variance	SOLID		R211094-24	B00-029	B00-029-251	11/19/02 08:53
Method Blank		SOLID		R211094-25	B00-029		

SAMPLE SUMMARY

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SUMMARY DATA SECTION

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Protocol Hanford

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Form DVD-CS

Version 3.06

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

## QC SUMMARY

SDG 7733  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG H1978

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7733	B00-029-251	J00992	SOLID	100.0	982.9 g		11/20/02	1	R211094-01	7733-001
		J00993	SOLID	100.0	1039 g		11/20/02	1	R211094-02	7733-002
		J00994	SOLID	100.0	943.5 g		11/20/02	1	R211094-03	7733-003
		J00995	SOLID	100.0	931.5 g		11/20/02	1	R211094-04	7733-004
		J00996	SOLID	100.0	822.3 g		11/20/02	1	R211094-05	7733-005
		J00997	SOLID	100.0	653.5 g		11/20/02	1	R211094-06	7733-006
		J00998	SOLID	100.0	852.8 g		11/20/02	1	R211094-07	7733-007
		J00999	SOLID	100.0	903.0 g		11/20/02	1	R211094-08	7733-008
		J00980	SOLID	100.0	556.6 g		11/20/02	1	R211094-09	7733-009
		J00981	SOLID	100.0	710.5 g		11/20/02	1	R211094-10	7733-010
		J00982	SOLID	100.0	915.3 g		11/20/02	1	R211094-11	7733-011
		J00983	SOLID	100.0	852.7 g		11/20/02	1	R211094-12	7733-012
		J00984	SOLID	100.0	834.0 g		11/20/02	1	R211094-13	7733-013
		J00985	SOLID	100.0	706.8 g		11/20/02	1	R211094-14	7733-014
		J00986	SOLID	100.0	963.3 g		11/20/02	1	R211094-15	7733-015
		J00987	SOLID	100.0	841.1 g		11/20/02	1	R211094-16	7733-016
		J00988	SOLID	100.0	949.8 g		11/20/02	1	R211094-17	7733-017
		J00989	SOLID	100.0	1030 g		11/20/02	1	R211094-18	7733-018
		J009C0	SOLID	100.0	829.7 g		11/20/02	1	R211094-19	7733-019
		J009C1	SOLID	100.0	834.4 g		11/20/02	1	R211094-20	7733-020
		J009C2	SOLID	100.0	895.7 g		11/20/02	1	R211094-21	7733-021
		J009C3	SOLID	100.0	822.0 g		11/20/02	1	R211094-22	7733-022
		J009C4	SOLID	100.0	591.9 g		11/20/02	1	R211094-23	7733-023
		J009C5	SOLID	100.0	682.2 g		11/20/02	1	R211094-24	7733-024
		Method Blank	SOLID						R211094-25	7733-025

# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7733

Contact Melissa C. Mannion

## PREP BATCH SUMMARY

Client Hanford

Contract No. 630

Case no SDG H1978

TEST	MATRIX	METHOD	PREPARATION ERROR	_____		PLANCHETS ANALYZED				_____	QUALI-
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG
Gamma Spectroscopy											
GAM	SOLID	Gamma Scan	7032-102	15.0	24			1			

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY

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SUMMARY DATA SECTION

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Protocol Hanford

Version Ver 1.0

Form DVD-PBS

Version 3.06

Report date 11/27/02

# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7733

Contact Melissa C. Mannion

## WORK SUMMARY

Client Hanford

Contract No. 630

Case no SDG H1978

CLIENT SAMPLE ID		LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED			SUF-						
CUSTODY	SAF No	RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD		
J00992		R211094-01	7733-001	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J00993		R211094-02	7733-002	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J00994		R211094-03	7733-003	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J00995		R211094-04	7733-004	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J00996		R211094-05	7733-005	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J00997		R211094-06	7733-006	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J00998		R211094-07	7733-007	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J00999		R211094-08	7733-008	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J00980		R211094-09	7733-009	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009B1		R211094-10	7733-010	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

SDG 7733

Contact Melissa C. Mannion

## WORK SUMMARY, cont.

Client Hanford

Contract No. 630

Case no SDG H1978

CLIENT SAMPLE ID		LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED			SUF-						
CUSTODY	SAF No	RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD		
J009B2		R211094-11	7733-011	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009B3		R211094-12	7733-012	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009B4		R211094-13	7733-013	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009B5		R211094-14	7733-014	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009B6		R211094-15	7733-015	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009B7		R211094-16	7733-016	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009B8		R211094-17	7733-017	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009B9		R211094-18	7733-018	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009C0		R211094-19	7733-019	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									
J009C1		R211094-20	7733-020	GAM		11/25/02	11/27/02	MCM	Gamma Scan		
116-F-1 Shallow Variance	SOLID	11/19/02									
B00-029-251	B00-029	11/20/02									

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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

## WORK SUMMARY, cont.

SDG 7733  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Case no SDG H1978

CLIENT SAMPLE ID LOCATION CUSTODY	MATRIX SAF No	LAB SAMPLE ID COLLECTED RECEIVED	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
J009C2 116-F-1 Shallow Variance B00-029-251	SOLID B00-029	R211094-21 11/19/02 11/20/02	7733-021	GAM		11/26/02	11/27/02	MCM	Gamma Scan
J009C3 116-F-1 Shallow Variance B00-029-251	SOLID B00-029	R211094-22 11/19/02 11/20/02	7733-022	GAM		11/26/02	11/27/02	MCM	Gamma Scan
J009C4 116-F-1 Shallow Variance B00-029-251	SOLID B00-029	R211094-23 11/19/02 11/20/02	7733-023	GAM		11/26/02	11/27/02	MCM	Gamma Scan
J009C5 116-F-1 Shallow Variance B00-029-251	SOLID B00-029	R211094-24 11/19/02 11/20/02	7733-024	GAM		11/26/02	11/27/02	MCM	Gamma Scan
Method Blank SOLID B00-029		R211094-25 11/19/02 11/20/02	7733-025	GAM		11/26/02	11/27/02	MCM	Gamma Scan

## COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	B00-029	Gamma Scan	GAMMA_GS	24			1			25
TOTALS				24			1			25

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**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211094-25**

**Method Blank**

**METHOD BLANK**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-25</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7733-025</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.055</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.10	U	GAM
Europium 152	14683-23-9	U		0.095	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.16</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.12</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.22		U	GAM

100 F Area - Quick Turn

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-01

J00992

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-01</u>	Client sample id <u>J00992</u>	
Dept sample id <u>7733-001</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:04 982.9 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.069</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.056</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.20</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.094</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.069</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-02

J00993

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R211094-02</u>	Client sample id <u>J00993</u>	
Dept sample id <u>7733-002</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:06</u> <u>1039 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.036	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.10	U	GAM
Europium 152	14683-23-9	U		0.088	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.13</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.075	0.10	U	GAM
Americium 241	14596-10-2	U		0.053		U	GAM

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-03

J00994

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-03</u>	Client sample id <u>J00994</u>	
Dept sample id <u>7733-003</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:08 943.5 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.054</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.060</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.22</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.20</u>		U	GAM

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**SAMPLE DELIVERY GROUP H1978**

R211094-04

J00995

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-04</u>	Client sample id <u>J00995</u>	
Dept sample id <u>7733-004</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:10 931.5 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.041	0.050	U	GAM
Cesium 137	10045-97-3	U		0.037	0.10	U	GAM
Europium 152	14683-23-9	U		0.089	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.14</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.098	0.10	U	GAM
Americium 241	14596-10-2	U		0.12		U	GAM

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**SAMPLE DELIVERY GROUP H1978**

R211094-05

J00996

**DATA SHEET**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R211094-05</u>	Client sample id <u>J00996</u>	
Dept sample id <u>7733-005</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:12 822.3 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.057</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.049</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.17</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.16</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.41</u>		U	GAM

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**SAMPLE DELIVERY GROUP H1978**

**R211094-06**

**J00997**

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-06</u>	Client sample id <u>J00997</u>	
Dept sample id <u>7733-006</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:14 653.5 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.13</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.11</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.22</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.43</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.18</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.14		U	GAM

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**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211094-07**

**J00998**

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-07</u>	Client sample id <u>J00998</u>	
Dept sample id <u>7733-007</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:17 852.8 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.055</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.043</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.14</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.10</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.074</u>		U	GAM

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**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211094-08**

**J00999**

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-08</u>	Client sample id <u>J00999</u>	
Dept sample id <u>7733-008</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:19 903.0 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.089</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.070</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.18</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.31</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.18</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.25</u>		U	GAM

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-09

J009B0

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-09</u>	Client sample id <u>J009B0</u>	
Dept sample id <u>7733-009</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:21 556.6 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.096</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.729	0.11	0.096	0.10		GAM
Europium 152	14683-23-9	0.979	0.17	<u>0.19</u>	0.10		GAM
Europium 154	15585-10-1	U		<u>0.31</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.23</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.28		U	GAM

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-10

J009B1

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-10</u>	Client sample id <u>J009B1</u>	
Dept sample id <u>7733-010</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:23</u> <u>710.5 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.096</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.084</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.18</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.24</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.25</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.62</u>		U	GAM

100 F Area - Quick Turn



**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-11

J009B2

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-11</u>	Client sample id <u>J009B2</u>	
Dept sample id <u>7733-011</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:25 915.3 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.062</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.048</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.12</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.21</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.093</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.067</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-12

J009B3

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R211094-12</u>	Client sample id <u>J009B3</u>	
Dept sample id <u>7733-012</u>	Location/Matrix <u>116-F-1 Shallow Variance</u>	<u>SOLID</u>
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:27</u>	<u>852.7 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.039	0.050	U	GAM
Cesium 137	10045-97-3	U		0.037	0.10	U	GAM
Europium 152	14683-23-9	U		0.090	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.084	0.10	U	GAM
Americium 241	14596-10-2	U		0.056		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-13

J009B4

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-13</u>	Client sample id <u>J009B4</u>	
Dept sample id <u>7733-013</u>	Location/Matrix <u>116-F-1 Shallow Variance</u>	<u>SOLID</u>
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:30</u>	<u>834.0 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.074</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.055</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.15</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.21</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.20</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-14

J009B5

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-14</u>	Client sample id <u>J009B5</u>	
Dept sample id <u>7733-014</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:32 706.8 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.062</u>	0.050	U	GAM
Cesium 137	10045-97-3	0.396	0.068	<u>0.063</u>	0.10		GAM
Europium 152	14683-23-9	0.858	0.11	<u>0.13</u>	0.10		GAM
Europium 154	15585-10-1	U		<u>0.20</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.18		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-15

J009B6

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R211094-15</u>	Client sample id <u>J009B6</u>	
Dept sample id <u>7733-015</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:34 963.3 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.040	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.34		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

**R211094-16**

**J009B7**

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-16</u>	Client sample id <u>J009B7</u>	
Dept sample id <u>7733-016</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:36</u> <u>841.1 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.068</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.052</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.23</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.095</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.070</u>		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-17

J009B8

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-17</u>	Client sample id <u>J009B8</u>	
Dept sample id <u>7733-017</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:38 949.8 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.038	0.050	U	GAM
Cesium 137	10045-97-3	U		0.035	0.10	U	GAM
Europium 152	14683-23-9	U		0.094	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.12</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.074	0.10	U	GAM
Americium 241	14596-10-2	U		0.053		U	GAM

100 F Area - Quick Turn

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**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211094-18**

**J009B9**

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SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R211094-18</u>	Client sample id <u>J009B9</u>	
Dept sample id <u>7733-018</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:40</u> <u>1030 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.059</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.053</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.19</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.13</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.19</u>		U	GAM

100 F Area - Quick Turn

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-19

J009C0

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>No. 630</u>	
Lab sample id <u>R211094-19</u>	Client sample id <u>J009C0</u>	
Dept sample id <u>7733-019</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:43 829.7 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.037	0.10	U	GAM
Europium 152	14683-23-9	U		0.093	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.14</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Americium 241	14596-10-2	U		0.13		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-20

J009C1

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-20</u>	Client sample id <u>J009C1</u>	
Dept sample id <u>7733-020</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:45 834.4 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.048	0.050	U	GAM
Cesium 137	10045-97-3	U		0.045	0.10	U	GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.15</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.14</u>	0.10	U	GAM
Americium 241	14596-10-2	U		0.36		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-21

J009C2

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-21</u>	Client sample id <u>J009C2</u>	
Dept sample id <u>7733-021</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:47 895.7 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.078</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.064</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.25</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.098</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.072</u>		U	GAM

100 F Area - Quick Turn

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# EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H1978

R211094-22

J009C3

## DATA SHEET

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-22</u>	Client sample id <u>J009C3</u>	
Dept sample id <u>7733-022</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:49</u> <u>822.0 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.044	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.11</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.16</u>	0.10	U	GAM
Europium 155	14391-16-3	U		0.095	0.10	U	GAM
Americium 241	14596-10-2	U		0.067		U	GAM

100 F Area - Quick Turn

**EBERLINE SERVICES / RICHMOND**

**SAMPLE DELIVERY GROUP H1978**

**R211094-23**

**J009C4**

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-23</u>	Client sample id <u>J009C4</u>	
Dept sample id <u>7733-023</u>	Location/Matrix <u>116-F-1 Shallow Variance SOLID</u>	
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:51</u> <u>591.9 g</u>	
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u> <u>B00-029</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.11</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.083</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.22</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.36</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.23</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.33</u>		U	GAM

100 F Area - Quick Turn

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**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H1978**

R211094-24

J009C5

**D A T A   S H E E T**

SDG <u>7733</u>	Client/Case no <u>Hanford</u>	SDG <u>H1978</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R211094-24</u>	Client sample id <u>J009C5</u>	
Dept sample id <u>7733-024</u>	Location/Matrix <u>116-F-1 Shallow Variance</u>	<u>SOLID</u>
Received <u>11/20/02</u>	Collected/Weight <u>11/19/02 08:53</u>	<u>682.2 g</u>
% solids <u>100.0</u>	Custody/SAF No <u>B00-029-251</u>	<u>B00-029</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Cobalt 60	10198-40-0	U		<u>0.057</u>	0.050	U	GAM
Cesium 137	10045-97-3	U		<u>0.055</u>	0.10	U	GAM
Europium 152	14683-23-9	U		<u>0.13</u>	0.10	U	GAM
Europium 154	15585-10-1	U		<u>0.20</u>	0.10	U	GAM
Europium 155	14391-16-3	U		<u>0.15</u>	0.10	U	GAM
Americium 241	14596-10-2	U		<u>0.19</u>		U	GAM

100 F Area - Quick Turn

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>11/27/02</u>

# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

## METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Test GAM Matrix SOLID  
SDG 7733  
Contact Melissa C. Mannion

Client Hanford  
Contract No. 630  
Contract SDG H1978

## RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Cobalt 60	Cesium 137
------------------	------------------	-----------------	------------------	-----------	------------

Preparation batch 7032-102

J00992	R211094-01	7733-001	U	U
J00993	R211094-02	7733-002	U	U
J00994	R211094-03	7733-003	U	U
J00995	R211094-04	7733-004	U	U
J00996	R211094-05	7733-005	U	U
J00997	R211094-06	7733-006	U	U
J00998	R211094-07	7733-007	U	U
J00999	R211094-08	7733-008	U	U
J00980	R211094-09	7733-009	U	0.729
J00981	R211094-10	7733-010	U	U
J00982	R211094-11	7733-011	U	U
J00983	R211094-12	7733-012	U	U
J00984	R211094-13	7733-013	U	U
J00985	R211094-14	7733-014	U	0.396
J00986	R211094-15	7733-015	U	U
J00987	R211094-16	7733-016	U	U
J00988	R211094-17	7733-017	U	U
J00989	R211094-18	7733-018	U	U
J009C0	R211094-19	7733-019	U	U
J009C1	R211094-20	7733-020	U	U
J009C2	R211094-21	7733-021	U	U
J009C3	R211094-22	7733-022	U	U
J009C4	R211094-23	7733-023	U	U
J009C5	R211094-24	7733-024	U	U
BLK (QC ID=43230)	R211094-25	7733-025	U	U

Nominal values and limits from method	RDls (pCi/g)	0.050	0.10
100 F Area - Quick Turn			

METHOD SUMMARIES

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Lab id EBRLNE  
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Version Ver 1.0  
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# EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H1978

Test GAM Matrix SOLID  
SDG 7733  
Contact Melissa C. Mannion

## METHOD SUMMARY

GAMMA SCAN  
GAMMA SPECTROSCOPY

Client Hanford  
Contract No. 630  
Contract SDG H1978

## METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 7032-102 2a prep error 15.0 % Reference Lab Notebook 7024 pg. 102															
J00992	R211094-01			0.069	983					49			6	11/23/02	02,01,00
J00993	R211094-02			0.036	1040					49			6	11/23/02	MB,07,00
J00994	R211094-03			0.054	943					49			6	11/23/02	02,03,00
J00995	R211094-04			0.041	932					49			6	11/23/02	02,04,00
J00996	R211094-05			0.057	822					49			6	11/23/02	MB,05,00
J00997	R211094-06			0.13	654					31			6	11/23/02	02,01,00
J00998	R211094-07			0.055	853					31			6	11/23/02	MB,07,00
J00999	R211094-08			0.089	903					31			6	11/23/02	02,03,00
J00980	R211094-09			0.096	557					31			6	11/23/02	02,04,00
J00981	R211094-10			0.096	710					31			6	11/23/02	MB,05,00
J00982	R211094-11			0.062	915					53			6	11/23/02	02,01,00
J00983	R211094-12			0.039	853					54			6	11/23/02	MB,07,00
J00984	R211094-13			0.074	834					53			6	11/23/02	02,03,00
J00985	R211094-14			0.062	707					54			6	11/23/02	02,04,00
J00986	R211094-15			0.043	963					54			6	11/23/02	MB,05,00
J00987	R211094-16			0.068	841					55			6	11/23/02	02,01,00
J00988	R211094-17			0.038	950					55			6	11/23/02	MB,07,00
J00989	R211094-18			0.059	1030					55			6	11/23/02	02,03,00
J009C0	R211094-19			0.040	830					55			6	11/23/02	02,04,00
J009C1	R211094-20			0.048	834					55			6	11/23/02	MB,05,00
J009C2	R211094-21			0.078	896					45			7	11/23/02	02,01,00
J009C3	R211094-22			0.043	822					45			7	11/23/02	MB,07,00
J009C4	R211094-23			0.11	592					45			7	11/23/02	02,03,00
J009C5	R211094-24			0.057	682					45			7	11/23/02	02,04,00
BLK (QC ID=43230)	R211094-25			0.055	557					45				11/23/02	MB,05,00
Nominal values and limits from method				0.050	557					100			180		

PROCEDURES REFERENCE GAMMA\_GS  
CP-100 Ge(Li) Preparation for Commercial Samples, rev 5

AVERAGES  $\pm$  2 SD MDA 0.064  $\pm$  0.049  
FOR 25 SAMPLES YIELD \_\_\_\_\_  $\pm$  \_\_\_\_\_

METHOD SUMMARIES

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SDG 7733  
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REPORT GUIDE

Client Hanford  
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SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- \* LAB SAMPLE ID is the lab's primary identification for a sample.
- \* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- \* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- \* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- \* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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SAMPLE DELIVERY GROUP H1978

SDG 7733  
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford  
Contract No. 630  
Case no SDG H1978

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- \* The preparation batches are shown in the same order as the Method Summary Reports are printed.
- \* Only analyses of planchets relevant to the SDG are included.
- \* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- \* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified.  
Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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SDG 7733  
Contact Melissa C. Mannion

## REPORT GUIDE

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## WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- \* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- \* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- \* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- \* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- \* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- \* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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SAMPLE DELIVERY GROUP H1978

SDG 7733  
Contact Melissa C. Mannion

## REPORT GUIDE

Client Hanford  
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## DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- \* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- \* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- \* ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- \* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- \* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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Client Hanford  
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## DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
  - B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
  - H Similar to 'L' except the recovery was high.
  - P The RESULT is 'preliminary'.
  - X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
  - 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- \* An MDA is underlined if it is bigger than its RDL.

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## DATA SHEET

- \* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- \* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- \* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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### LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- \* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  1. The error of RESULT, including that introduced by rounding the result prior to printing.
 

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
  2. The error of ADDED.
  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits for the recovery.
- \* The recovery is underlined if it is outside either of these ranges.

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## REPORT GUIDE

Client Hanford  
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### DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- \* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- \* The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

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## DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- \* The RPD is underlined if it is greater than either limit.
- \* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- \* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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## REPORT GUIDE

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## MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- \* The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- \* The second limits are protocol defined upper and lower QC limits

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## MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- \* The recovery is underlined (out of spec) if it is outside either of these ranges.

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## METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- \* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- \* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- \* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- \* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- \* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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## METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- \* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- \* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- \* Aliquots are underlined if less than the nominal value specified for the method.
- \* Preparation factors are underlined if greater than the nominal value specified for the method.
- \* Dilution factors are underlined if greater than the nominal value specified for the method.
- \* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- \* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- \* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

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## METHOD SUMMARY

- \* Count times are underlined if less than the nominal value specified for the method.
- \* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- \* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- \* Days Held are underlined if greater than the holding time specified in the protocol.
- \* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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Case no SDG\_H1978

## METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

### REPORT GUIDES

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### SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol Hanford  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 11/27/02

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B00-029-251		Page 1 of 2		
Collector MT Stankovich / <i>Fahberg</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Protect Coordinator TRENT, SJ		Price Code <i>2 D</i>		Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<i>H1978 (7733)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7 Days</i>			
Ice Chest No. <i>SEE OSC</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx					
Shipped To <i>TMJRECRA</i>		Offsite Property No. <i>A030055</i>		Bill of Lading/Air Bill No. <i>SEE OSC</i>							
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radioactive</i> <i>Tic To B13 DV9</i>  Special Handling and/or Storage <i>None</i>				Preservation None							
				Type of Container Marinelli							
				No. of Container(s) 1							
				Volume 500mL							
				See item (1) in Special Instructions.							
SAMPLE ANALYSIS											
Sample No.		Matrix *		Sample Date		Sample Time					
J00992		SOIL		11-19-02		0804		X			
J00993		SOIL		11-19-02		0806		X			
J00994		SOIL		11-19-02		0808		X			
J00995		SOIL		11-19-02		0810		X			
J00996		SOIL		11-19-02		0812		X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)			
<i>RECEIVED</i>		<i>11/19/02</i>		<i>Fed Ex</i>		<i>11/20/02 9:55</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<i>Fed Ex</i>		<i>11/20/02 9:55</i>		<i>Fed Ex</i>		<i>11/20/02 9:55</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Trace WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					



<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B00-029-251</b>		Page 2 of 2	
Collector MT Stankovich / <i>Faniberger</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <i>20</i> Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<i>H1978 (7733)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7 Days</i>	
Ice Chest No. <i>SEE OSA</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx			
Shipped To <i>TMA/RECRA</i>		Offsite Property No. <i>A030055</i>				Bill of Lading/Air Bill No. <i>SEE OSA</i>			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  <i>Radioactive      TIC TO B13 DV9</i>  <b>Special Handling and/or Storage</b> <i>None</i>					Preservation		None		
					Type of Container		Marinelli		
					No. of Container(s)		1		
					Volume		500mL		
<b>SAMPLE ANALYSIS</b>					See item (1) in Special Instructions.				
Sample No.		Matrix *		Sample Date		Sample Time			
J00997		SOIL		11-19-02		0814		X	
J00998		SOIL		11-19-02		0817		X	
J00999		SOIL		11-19-02		0819		X	
J009B0		SOIL		11-19-02		0821		X	
J009B1		SOIL		11-19-02		0823		X	
<b>CHAIN OF POSSESSION</b>					<b>SPECIAL INSTRUCTIONS</b>				
Relinquished By/Removed From <i>ERC</i> Date/Time <i>11/20</i> <i>R. F. Faniberger</i> 11-19-02 Relinquished By/Removed From <i>Fed Ex</i> Date/Time <i>11/20/02 9:55</i> Relinquished By/Removed From _____ Date/Time _____ Relinquished By/Removed From _____ Date/Time _____ Relinquished By/Removed From _____ Date/Time _____ Relinquished By/Removed From _____ Date/Time _____					Sign/Print Names Received By/Stored In <i>Fed Ex</i> Date/Time _____ Received By/Stored In <i>John Doe</i> 11/20/02 9:55 Received By/Stored In _____ Date/Time _____ Received By/Stored In _____ Date/Time _____ Received By/Stored In _____ Date/Time _____ Received By/Stored In _____ Date/Time _____				
<b>LABORATORY SECTION</b> Received By _____ Title _____ Date/Time _____					<b>Matrix *</b> S=Soil SE=Sludge SO=Solid SP=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trans WI=Wipe L=Liquid V=Vegetation X=Other				
<b>FINAL SAMPLE DISPOSITION</b> Disposal Method _____ Disposed By _____ Date/Time _____									

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B00-029-251</b>		Page 2 of 2	
Collector MT Stankovich / <i>Fahberg</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <b>20</b> Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<i>H1978 (7733)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> <i>7 Days</i>	
Ice Chest No. <i>SEE OSPC</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx			
Shipped To <del>TMA</del> RECRA		Offsite Property No. <i>A030055</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>					
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  Radioactive <i>Tic To B13DV9</i>  Special Handling and/or Storage <i>None</i>				Preservation		None			
				Type of Container		Marinelli			
				No. of Container(s)		1			
				Volume		500mL			
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.					
Sample No.		Matrix *	Sample Date	Sample Time					
✓ J009B2		SOIL	11-19-02	0825	X				
✓ J009B3		SOIL	11-19-02	0827	X				
✓ J009B4		SOIL	11-19-02	0830	X				
✓ J009B5		SOIL	11-19-02	0832	X				
✓ J009B6		SOIL	11-19-02	0834	X				
<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>  S=Soil SE=Sediment SO=Solid Sl=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>REC</i>		Date/Time <i>1/20/02</i>		Received By/Stored In <i>FOR EX</i>		Date/Time			
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>11/20/02 4:55</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time <i>9:55 11/20/02</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time	

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>						<b>B00-029-251</b>		<b>Page 4 of 5</b>	
Collector MT Stankovich / <i>Fahlberg</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <i>2D</i>		Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance		<i>H1978 (7733)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/>		<i>Days</i>	
Ice Chest No. <i>SEE OSCP</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx					
Shipped To <i>TMA/RECRA</i>		Offsite Property No. <i>A030055</i>				Bill of Lading/Air Bill No. <i>SEE OSCP</i>					
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> <i>Radioactive Tie To B13DV9</i>  <b>Special Handling and/or Storage</b> <i>None</i>				Preservation		None					
				Type of Container		Marinelli					
				No. of Container(s)		1					
				Volume		500mL					
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.							
Sample No.		Matrix *	Sample Date	Sample Time							
✓ J009B7		SOIL	11.19.02	0836	✓						
✓ J009B8		SOIL	11.19.02	0838	✓						
✓ J009B9		SOIL	11.19.02	0840	✓						
✓ J009C0		SOIL	11.19.02	0843	✓						
✓ J009C1		SOIL	11.19.02	0845	✓						
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b> (1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)			
Relinquished By/Removed From <i>R. Fahlberg</i>		Date/Time <i>11-19-02 9:00</i>		Received By/Stored In <i>F. Ex</i>		Date/Time					
Relinquished By/Removed From <i>F. Ex</i>		Date/Time <i>11/20/02 9:55</i>		Received By/Stored In <i>[Signature]</i>		Date/Time <i>9:55 11/20/02</i>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sediment W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time			
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time			

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B00-029-251</b>		Page 2 of 2	
Collector MT Stankovich <i>Fahberg</i>		Company Contact Mike Stankovich		Telephone No. 531-7620		Project Coordinator TRENT, SJ		Price Code <i>2 D</i> Data Turnaround	
Project Designation 100 F Area - Quick Turn		Sampling Location 116-F-1 Shallow Variance <i>H1978 (7733)</i>		SAF No. B00-029		Air Quality <input type="checkbox"/> Days			
Ice Chest No. <i>SEK OSPC</i>		Field Logbook No. EI-1535-7		COA R116F12000		Method of Shipment FedEx			
Shipped To <i>TMA/RECRA</i>		Offsite Property No. <i>A030055</i>				Bill of Lading/Air Bill No. <i>SEK OSPC</i>			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> Radioactive <i>TicTo B13DV9</i>  Special Handling and/or Storage <i>None</i>					Preservation		None		
					Type of Container		Marinelli		
					No. of Container(s)		1		
					Volume		500mL		
<b>SAMPLE ANALYSIS</b>					See item (1) in Special Instructions.				
Sample No.		Matrix *		Sample Date		Sample Time			
/ J009C2		SOIL		11-19-02		0847		X	
/ J009C3		SOIL		11-19-02		0849		X	
/ J009C4		SOIL		11-19-02		0851		X	
/ J009C5		SOIL		11-19-02		0853		X	
<b>CHAIN OF POSSESSION</b>					<b>SPECIAL INSTRUCTIONS</b>				
Relinquished By/Removed From <i>REC</i> Date/Time <i>11-19-02</i>		Received By/Stored In <i>Fcd</i> Date/Time <i>11-20-02 9:55</i>			(1) Gamma Spectroscopy - Screen (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)  Matrix * S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time WI=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By/Removed From <i>Fcd</i> Date/Time <i>11-20-02 9:55</i>		Received By/Stored In <i>Fcd</i> Date/Time <i>11-20-02 9:55</i>							
Relinquished By/Removed From		Received By/Stored In							
Relinquished By/Removed From		Received By/Stored In							
Relinquished By/Removed From		Received By/Stored In							
Relinquished By/Removed From		Received By/Stored In							
<b>LABORATORY SECTION</b>		Received By			Title				
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method			Disposed By				
					Date/Time				

**SAMPLE RECEIPT CHECKLIST**

SAMPLE RECEIPT			
Client: <u>Bechtels Hanford</u>	Date/Time received <u>11-20-02</u>		
CoC No. <u>800-029-251</u>			
Container I.D. No. <u>ERC-96-056</u>		Requested TAT (Days) <u>7 Days</u> P.O. Received Yes [ ] No [ ]	
INSPECTION			
1.	Custody seals on shipping container intact?	Yes [ <input checked="" type="checkbox"/> ]	No [ <input type="checkbox"/> ] N/A [ <input type="checkbox"/> ]
2.	Custody seals on shipping container dated & signed?	Yes [ <input checked="" type="checkbox"/> ]	No [ <input type="checkbox"/> ] N/A [ <input type="checkbox"/> ]
3.	Custody seals on sample containers intact?	Yes [ <input checked="" type="checkbox"/> ]	No [ <input type="checkbox"/> ] N/A [ <input type="checkbox"/> ]
4.	Custody seals on sample containers dated & signed?	Yes [ <input checked="" type="checkbox"/> ]	No [ <input type="checkbox"/> ] N/A [ <input type="checkbox"/> ]
5.	Packing material is:	Wet [ <input type="checkbox"/> ]	Dry [ <input checked="" type="checkbox"/> ]
6.	Number of samples in shipping container: <u>24</u>		
7.	Number of containers per sample: <u>1 each</u> (Or see CoC _____)		
8.	Paperwork agrees with samples?	Yes [ <input checked="" type="checkbox"/> ]	No [ <input type="checkbox"/> ]
9.	Samples have: Tape [ <input checked="" type="checkbox"/> ] Hazard labels [ <input type="checkbox"/> ] Rad labels [ <input type="checkbox"/> ] Appropriate sample labels [ <input checked="" type="checkbox"/> ]		
10.	Samples are: In good condition [ <input checked="" type="checkbox"/> ] Leaking [ <input type="checkbox"/> ] Broken Container [ <input type="checkbox"/> ] Missing [ <input type="checkbox"/> ]		
11.	Describe any anomalies: <u>None</u>		
13.	Was P.M. notified of any anomalies? Yes [ <input type="checkbox"/> ] No [ <input type="checkbox"/> ] Date _____		
14.	Received by <u>[Signature]</u> Date: <u>11/20/02</u> Time: <u>9:55 am</u>		

Customer Sample No.	cpm	mr/hr	wipe	Customer Sample No.	cpm	mr/hr	wipe

Ion Chamber Ser. No. _____	Calibration date _____
Alpha meter Ser. No. _____	Calibration date _____
Survey Meter Ser. No. _____	Calibration date _____